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Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400 Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640 Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val

Thr	Val 1115	Pro	Ile	Ala	Val	Gly 1120	Glu	Ser	Asp	Phe	Glu 1125	Asn	Leu	Asn
Thr	Glu 1130	Asp	Phe	Ser	Ser	Glu 1135	Ser	Asp	Leu	Glu	Glu 1140	Ser	Lys	Glu
Lys	Leu 1145	Asn	Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	-	Cys	Gln	Ile	Asn 1195		Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205		Leu	Arg	Arg	Thr 1210		Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220		Thr	Phe	Ile	Val 1225		Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255		Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
											Gly 1275		Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325		Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn

Ala	Leu 1340	Leu	Gly	Ala		Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355	Ile	Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	_	His 1375		Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	_	Ile	Glu	_	Val 1390		Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400		Arg	Asn		Thr 1405		Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	_	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435	Asp	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445	Asn	Val	Glu		Gln 1450		Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe	Gly	Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510	Met	Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	Lys	Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540	Gln	Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555	Val	Thr	Met	Met	Val 1560	Glu	Thr	Asp

Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570	Thr	Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	Gly	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600	Thr	Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615	Ile	Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Leu	Ile 1625	Glu	Lys	Tyr	Phe	Val 1630	Ser	Pro	Thr	Leu	Phe 1635	Arg	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn

Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp 1795 1790 Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp 1810 1805 Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala 1820 1825 1830 Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1840 1845 1835 Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1855 1860 Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 1875 Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 1890 Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1900 1895 Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935 Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950 Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965 Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980 Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995 Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys

2005

2000

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Trp Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 . 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445 Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu-Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 \$1105\$
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155

Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	Сув	Cys	Gln	Ile	Asn 1195		Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205	Asn	Leu	Arg	_	Thr 1210	_	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220	Glu	Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345		Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355	Ile	Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375	Сув	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp

Arg	Phe 1385	Asp	Ile	Glu		Val 1390		Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405	Ala	Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	_	Met 1435	_	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445	Asn	Val	Glu	Leu	Gln 1450	Pro	Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe		Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510	Met	Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	Lys	Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val		Arg 1540		Val	Phe		Ile 1545		Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555		Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570		Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	_	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600	Thr	Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp

Phe Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu 1615 1610 Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile 1630 1625 Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala 1640 1645 Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro 1660 1665 1655 Ala Leu Phe Asn Ile Gly Leu Leu Phe Leu Val Met Phe Ile 1670 1675 1680 Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu 1685 1690 Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser 1705 1700 Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly 1715 1720 Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro 1735 1730 1740 Asn Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn 1745 1750 1755 Pro Ser Val Gly Ile Phe Phe Val Ser Tyr Ile Ile Ile Ser 1760 1765 1770 Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn 1775 1780 1785 Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp 1790 1795 1800 Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp 1805 1810 1815

Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala

1830

1825

1820

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1835 1840 1845

Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1855 1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

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Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Lys Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495

- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
965 970 975

- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200

Trp	Trp 1205	Asn	Leu	Arg	_	Thr 1210	Cys	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220	Glu	Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu		Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala		Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355		Phe	Trp	Leu	Ile 1360			Ile		Gly 1365	Val	Asn	Leu
Phe	Ala 1370	-	Lys	Phe	Tyr	His 1375	Cys	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390	Asn	Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405	Ala	Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420		Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val

- Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp 1430 1435 1440

 Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr
- Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe 1460 1465 1470

1450

1445

- Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln 1475 1480 1485
- Gln Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu 1490 1495 1500
- Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys 1505 1510 1515
- Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met 1520 1530
- Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met 1535 1540 1545
- Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu 1565 1570 1575
- Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile 1580 1585 1590
- Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp 1595 1600 1605
- Phe Val Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu 1610 1615 1620
- Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile 1625 1630 1635
- Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala 1640 1650 1650

Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660		Ala	Leu	Met	Met 1665		Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690		Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	туг	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805			Phe	=	Glu 1810		_	Glu	_	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
Leu	Ile 1850	Ala	Met	Asp	Leu	Pro 1855	Met	Val	Ser	Gly	Asp 1860	Arg	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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<211> 2009

<212> PRT

<213> Homo sapiens

<400> 29

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly
35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60 Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Arg Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300 Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn Glu 995 1000 1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020

- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 $$ 1060 $$ 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200
- Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 1215
- Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1230
- Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245

- Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe 1250

 Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr 1265
- Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1280 1285 1290
- Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu 1295 1300 1305
- Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1310 1315 1320
- Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn 1325 1330 1335
- Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350
- Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 1365
- Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp 1370 1375 1380
- Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1385 1390 1395
- Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val 1400 1405 1410
- Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val 1415 1420 1425
- Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp 1430 1435 1440
- Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr 1445 1450 1455
- Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe 1460 1465 1470

Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp 1550 1555 1560 Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile 1585 1590 Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile

Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu

Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710		Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720		Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730		Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	_	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	_	Ser 1750		Val	Lys	Gly	Asp 1755	_	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	_	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810	Val	Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro		Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
	Ile 1850		Met	_		Pro 1855		Val		_	Asp 1860		Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe
Met	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr
Thr	Leu 1910	Lys	Arg	Lys	Gln	Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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<212> PRT

<213> Homo sapiens

<400> 30

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

- Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125
- Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140
- Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160
- Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175
- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220
- Lys Met Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 .525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815.
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065

- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1090 Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110 Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125 Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1150 1145 Ile Gly Ala Pro Val Glu Glu Pro Val Val Glu Pro Glu Glu 1160 1165 1170 Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185 Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200 Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1225 Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe 1250 1255 1260 Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr 1265 1270 1275
- Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1280 1285 1290

Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330		Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345		Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355		Phe	Trp		Ile 1360		Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375	_	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390		Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405		Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435	Asp	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
	_							-	-		Lys 1455		Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe	Gly	Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510		Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys

Pro	Gln 1520		Pro	Ile	Pro	Arg 1525		Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540		Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550		Cys	Leu	Asn	Met 1555		Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570		Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580		Val	Leu	Phe	Thr 1585		Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	_	Phe 1600		Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615	Ile	Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Leu	Ile 1625	Glu	Lys	Tyr	Phe	Val 1630	Ser	Pro	Thr	Leu	Phe 1635	Arg	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
	Leu 1670										Val 1680		Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro

									•						
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn	
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser	
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn	
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795		Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp	
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810		Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp	
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala	
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840		Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln	
Leu	Ile 1850	Ala	Met	Asp	Leu	Pro 1855	Met	Val	Ser	Gly	Asp 1860	Arg	Ile	His	
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu	
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe	
Met	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr	
Thr	Leu 1910	Lys	Arg	Lys	Gln	Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln	
Arg	Ala 1925	Tyr	Arg	Arg	His	Leu 1930	Leu	Lys	Arg	Thr	Val 1935	Lys	Gln	Ala	
Ser	Phe 1940	Thr	Tyr	Asn	Lys	Asn 1945	Lys	Ile	Lys	Gly	Gly 1950	Ala	Asn	Leu	
Leu	Ile 1955	Lys	Glu	Asp	Met	Ile 1960	Ile	Asp	Arg	Ile	Asn 1965	Glu	Asn	Ser	

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

- Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175
- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Thr Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu 485 490 495
- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly $645 \hspace{1.5cm} 650 \hspace{1.5cm} 655$

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110

Thr	Val 1115	Pro	Ile	Ala	Val	Gly 1120		Ser	Asp	Phe	Glu 1125		Leu	Asn
Thr	Glu 1130	Asp	Phe	Ser	Ser	Glu 1135		Asp	Leu	Glu	Glu 1140	Ser	Lys	Glu
Lys	Leu 1145	Asn	Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	Cys	Cys	Gln	Ile	Asn 1195	Val	Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205	Asn	Leu	Arg	Arg	Thr 1210	Cys	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220	Glu	Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240		Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn

Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Сув	Leu 1355	Ile	Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375		Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390		Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405		Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435	Asp	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445	Asn	Val	Glu	Leu	Gln 1450		Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
	_	-	_		_	_		_			Met 1500		Glu	Glu
Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510	Met	Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	Lys	Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540	Gln	Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555	Val	Thr	Met	Met	Val 1560	Glu	Thr	Asp

Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu 1575 1565 1570 Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile 1580 1585 1590 Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp 1595 1600 1605 Phe Val Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu 1610 1615 1620 Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile 1625 Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala 1640 1645 Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro 1655 1660 Ala Leu Phe Asn Ile Gly Leu Leu Phe Leu Val Met Phe Ile 1670 1675 Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu 1685 1690 1695 Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser 1700 1705 1710 Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly 1715 1720 1725 Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro 1730 1735 1740 Asn Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn 1745 1750 1755 Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser 1760 1765 1770

Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn

1785

1775 1780

Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp 1790 1795 Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp 1805 1810 Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala 1820 1825 1830 Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1835 1840 1845 Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1855 1860 Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 1920 Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935 Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950 Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965 Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980 Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1990 1995 1985 Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys

2005

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly
35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205 Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 . 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 . 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe His Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155

Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1285 1290 Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1310 1315 Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1345 1350 Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp

Arg	Phe 1385	_	Ile	Glu	Asp	Val 1390		Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405	Ala	Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	_	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435	Asp	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445		Val	Glu	Leu	Gln 1450		Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460		Tyr	Phe	Val	Ile 1465		Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475		Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	_	Lys	Phe	Gly	Gly 1495		Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	_	Tyr	Tyr	Asn	Ala 1510	Met	Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	_	Pro	Ile	Pro	Arg 1525		Gly	Asn	Lys	Phe 1530		Gly	Met
		_				_				_	Ile 1545		Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555	Val	Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570	Thr	Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	Gly	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600		Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp

Phe Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser 1700 1705 Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro Asn Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Val Ser Tyr Ile Ile Ile Ser 1765 1770 Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn 1780 1785 Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1835 1840 1845

Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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<400> 33

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln As
n Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu 485 490 495

- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu
 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975

- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200

Trp	Trp 1205	Asn	Leu	Arg	Arg	Thr 1210	Суз	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220		Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235		Phe	Asp	_	Ile 1240	-	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250		Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325		Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355	Ile	Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375	Cys	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390	Asn	Asn	His	Thr	Asp 1395	Суз	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405	Ala	Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val

Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp 1435 1430 Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr 1445 1450 Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe 1460 1465 1470 Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln 1475 1480 1485 Gln Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu 1490 1495 Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys 1505 Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met 1520 1525 Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met 1535 1540 1545 Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp 1550 1555 Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu 1565 1570 1575 Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile 1585 1590 1580 Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp 1595 1600 1605 Phe Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu 1610 1615 1620 Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile 1625 1630 1635 Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala 1640 1645 1650

Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745		Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
_	Phe 1805				_					-	Phe 1815	_	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
Leu	Ile 1850	Ala	Met	Asp	Leu	Pro 1855	Met	Val	Ser	Gly	Asp 1860	Arg	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

<210> 34

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<212> PRT

<213> Homo sapiens

<400> 34

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

- Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80
- Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95
- Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
 100 105 110
- Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125
- Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140
- Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160
- Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175
- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu 485 490 495
- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020

- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200
- Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 1215
- Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1230
- Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245

Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255		Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	туг	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355		Phe	Trp	Leu	Ile 1360		Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375	_	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390		Asn	His	Thr	Asp 1395	Gly	Leu	Lys
	Ile 1400		_					_	_	-	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435	Asp	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445	Asn	Val	Glu	Leu	Gln 1450 •	Pro	Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465		Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe

Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe	Gly	Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510		Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	Lys	Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	_	Phe	Val	Thr	Arg 1540		Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555		Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570		Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	_	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600	Thr	Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615	Ile	Val	Gly	Met	Phe 1620	Leu	Ala	Glu
	Ile 1625		_	-							Phe 1635	_	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690		Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu

Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705		Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765		Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795		Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810		Trp	Glu	Lys	Phe 1815	_	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
	Ile 1850			-						-	_	_	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe
Met	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr
Thr	Leu 1910	Lys	Arg	Lys	Gln	Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val

- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065

Ile	Gly 1070	Lys	Asp	Leu	Asp	Tyr 1075	Leu	Lys	Asp	Val	Asn 1080	Gly	Thr	Thr
Ser	Gly 1085	Ile	Gly	Thr	Gly	Ser 1090	Ser	Val	Glu	Lys	Tyr 1095	Ile	Ìle	Asp
Glu	Ser 1100	Asp	Tyr	Met	Ser	Phe 1105	Ile	Asn	Asn	Pro	Ser 1110	Leu	Thr	Val
Thr	Val 1115	Pro	Ile	Ala	Val	Gly 1120		Ser	Asp	Phe	Glu 1125	Asn	Leu	Asn
Thr	Glu 1130	Asp	Phe	Ser	Ser	Glu 1135		Asp	Leu	Glu	Glu 1140	Ser	Lys	Glu
Lys	Leu 1145		Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu		Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	Cys	Cys	Gln	Ile	Asn 1195	Val	Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205	Asn	Leu	Arg	Arg	Thr 1210	Cys	Phe	Arg	Ile	Val 1215	Glu	His	Asn
_	Phe 1220										Leu 1230		Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp

Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu 1300 Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1310 1315 Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1330 1325 1335 Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1350 1345 Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp 1370 1375 Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1385 1390 Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val 1405 1400 Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val 1415 1420 1425 Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Pro Val Asp 1430 1435 1440 Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr 1445 1450 1455 Met Tyr Leu Tyr Phe Val Ile Phe Ile Phe Gly Ser Phe Phe 1460 1465 1470 Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln 1475 1480 1485 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu 1490 1495 1500Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys

1510

Pro	Gln 1520		Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540	Gln	Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555	Val	Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570	Thr	Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585		Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595		His	Tyr	Tyr	Phe 1600		Ile	Gly	Trp	Asn 1605		Phe	Asp
Phe	Val 1610		Val	Ile	Leu	Ser 1615		Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Leu	Ile 1625		Lys	Tyr	Phe	Val 1630		Pro	Thr	Leu	Phe 1635	_	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
	Leu 1670				_	Leu 1675							Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Ģln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro

Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765		Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795		Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810	Val	Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
Leu	Ile 1850	Ala	Met	Asp	Leu	Pro 1855	Met	Val	Ser	Gly	Asp 1860	Arg	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe
	Ala 1895		Asn			Lys 1900		Ser	-		Pro 1905		Thr	Thr
Thr	Leu 1910	Lys	Arg	Lys	Gln	Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln
Arg	Ala 1925	Tyr	Arg	Arg	His	Leu 1930	Leu	Lys	Arg	Thr	Val 1935	Lys	Gln	Ala
Ser	Phe 1940	Thr	Tyr	Asn	Lys	Asn 1945	Lys	Ile	Lys	Gly	Gly 1950	Ala	Asn	Leu
Leu	Ile 1955	Lys	Glu	Asp	Met	Ile 1960	Ile	Asp	Arg	Ile	Asn 1965	Glu	Asn	Ser

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Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

- Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175
- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val $340 \hspace{1.5cm} 345 \hspace{1.5cm} 350$
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln As
n Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110

- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125 Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 Ile Gly Ala Pro Val Glu Glu Pro Val Val Glu Pro Glu Glu 1160 1165 1170 Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 -1180 1185 Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200 Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1225 Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245 Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe 1255 1260 1250 Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr 1265 1270 1275 Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1280 1285 1290
- Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1310 1315 1320

Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu

1300

1305

1295

Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1325 1330 1335

Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350 Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 1365 Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp 1370 1375 Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1385 1390 1395 Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val 1400 1405 Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val 1415 1420 Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp 1430 1435 1440 Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr 1445 Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe 1460 1470 Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln 1475 1480 1485 Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu 1490 1495 1500 Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys 1505 1510 1515 Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met 1520 1525 1530 Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Val Ser Ile Met 1535 1540 1545

Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp

1560

1555

Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570		Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	Gly	Glu	Суѕ	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600		Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile		Ser 1615		Val	Gly	Met	Phe 1620		Ala	Glu
Leu	Ile 1625	Glu	Lys	Tyr	Phe	Val 1630	Ser	Pro	Thr	Leu	Phe 1635	Arg	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
	Ile 1715	_	Leu			Ile 1720		Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765		Val	Ser	туr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn

Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp 1790 1795 1800 Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp 1805 1810 1815 Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala 1820 1825 1830 Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1835 1840 1845 Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1855 Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935 Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950 Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965 Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980 Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995 Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys

2000

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<400> 37

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 40

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 75

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 135

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 200 195 205

- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155

Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1325 1330 1335 Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp

Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys 1505 1510 Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met 1540 1545 Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp 1550 1555 1560 Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp

Ph	e Val 1610		Val	Ile	Leu	Ser 1615		Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Le	u Ile 1625		Lys	Tyr	Phe	Val 1630	Ser	Pro	Thr	Leu	Phe 1635	Arg	Val	Ile
Ar	g Leu 1640		Arg	Ile	Gly	Gln 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Ly	s Gly 1655		Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Al	a Leu 1670		Asn	Ile	Gly	Leu 1675		Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Ту	r Ala 1685		Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Va	l Gly 1700		Asp	Asp	Met	Phe 1705		Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Мe	t Ile 1715	_	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Le	u Leu 1730		Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
As	n Lys 1745		Asn	Pro	Gly	Ser 1750		Val	Lys	Gly	Asp 1755	-	Gly	Asn
Pr	o Ser 1760		_							-	Ile 1770	Ile	Ile	Ser
Ph	e Leu 1775		Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Ph	e Ser 1790		Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
As	p Phe 1805		Met	Phe	Tyr	Glu 1810	Val	Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Al	a Thr 1820		Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1835 1840 1845

Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1855 1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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<400> 38

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 5 10

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Glu Asn Gly 35 40

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325. 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leù Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln As
n Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495

- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu
 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
 725 730 735

- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975

- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200

Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 1365 Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val

Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp 1600 1605 Phe Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile 1625 1630 1635 Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala

								-225	5 -					
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Val	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	_	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725		Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755		Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810	Val	Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
Leu	Ile 1850	Ala	Met	Asp	Leu	Pro 1855	Met	Val	Ser	Gly	Asp 1860	Arg	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

<210> 39

<211> 2009

<212> PRT

<213> Homo sapiens

<400> 39

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60 Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 . 485 490 495
- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu
595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780

- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020

- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200
- Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 1215
- Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1230
- Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245

Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe -1255 Ile Leu Glu Met Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1390 1395 Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val 1400 1405 1410 Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe

Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe	Gly	Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510	Met	Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	Lys	Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540	Gln	Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555	Val	Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570	Thr	Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe ` 1580	Ile	Val	Leu	Phe	Thr 1585	Gly	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600	Thr	Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615	Ile	Val	Gly	Met	Phe 1620	Leu	Ala	Glu
			-	-		Val 1630					Phe 1635	_	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655	Ile	Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu

Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705		Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765		Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Thr	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795		Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	_	Glu 1810		Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825		Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
	Ile 1850			_						_	Asp 1860	_	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe
Met	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr
Thr	Leu 1910	Lys	Arg	Lys	Gln	Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1930 1925 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1980 1970 1975

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

<210> 40

<211> 90

<212> PRT

<213> Homo sapiens

<400> 40

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Ser Thr Ser 10

Ser Pro Glu Asn Leu Leu Arg Leu Leu Lys Asp Ala Leu Gln Lys Lys 20

Arg Gln Arg Ile Pro Asn Gln Thr Lys Lys Met Thr Thr Lys Met Ala 35 40

Gln Ser Gln Ile Val Thr Trp Lys Leu Glu Arg Thr Phe His Leu Phe 50 55 60

Met Glu Thr Phe Leu Gln Arg Trp Cys Gln Ser Pro Trp Arg Thr Trp 65 70 75

Thr Pro Thr Ile Ser Ile Arg Lys Leu Leu 85

<210> 41 <211> 169 <212> PRT <213> Homo sapiens

<400> 41

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Ser Glu Ser Phe 165

<210> 42

<211> 621

<212> PRT

<213> Homo sapiens

<400> 42

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Tyr Phe His Gln Gly Glu Ile Ala Glu Gln Ala Phe Ser Ala 565 570 575

Leu Glu Gly Glu Gln Arg Met Trp Asp Leu Arg Thr Thr Ser Gln Met 580 585 590

Met Ser Thr Ala Pro Leu Arg Ile Thr Arg Ala Val Glu Ile Pro Cys 595 600 605

Leu Cys Pro Asp Asp Thr Glu Arg Asp Ala Thr Ala Thr 610 615 620

<210> 43

·<211> 1078

<212> PRT

<213> Homo sapiens

<400> 43

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95 Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050

Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065

Ile Gly Lys Asp Leu Asp Tyr Leu Lys Met 1070 1075

<210> 44

<211> 1214

<212> PRT

<213> Homo sapiens

<400> 44

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln As
n Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 \cdot 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro $755 \hspace{1.5cm} 760 \hspace{1.5cm} 765$
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 $\,$ 810 $\,$ 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125

- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Ile 1175 1180 1185
- Gln Val Leu Ser Asn Gln Cys Gly Arg Arg Gln Arg Lys Thr Met 1190 1195 1200
- Val Glu Pro Glu Lys Asp Val Phe Pro Asn Ser 1205 1210
- <210> 45
- <211> 1358
- <212> PRT
- <213> Homo sapiens
- <400> 45
- Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15
- Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30
- Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45
- Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60
- Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80
- Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95
- Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

- Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125
- Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140
- Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160
- Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175
- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240
- Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255
- Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270
- Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285
- Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300
- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu 485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620
- Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640
- Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655
- Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670
- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 888
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065

Ile	Gly 1070	Lys	Asp	Leu	Asp	Tyr 1075	Leu	Lys	Asp	Val	Asn 1080	Gly	Thr	Thr
Ser	Gly 1085	Ile	Gly	Thr	Gly	Ser 1090	Ser	Val	Glu	Lys	Tyr 1095	Ile	Ile	Asp
Glu	Ser 1100	Asp	Tyr	Met	Ser	Phe 1105	Ile	Asn	Asn	Pro	Ser 1110	Leu	Thr	Val
Thr	Val 1115	Pro	Ile	Ala	Val	Gly 1120	Glu	Ser	Asp	Phe	Glu 1125	Asn	Leu	Asn
Thr	Glu 1130	Asp	Phe	Ser	Ser	Glu 1135	Ser	Asp	Leu	Glu	Glu 1140	Ser	Lys	Glu
Lys	Leu 1145	Asn	Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	Сув	Cys	Gln	Ile	Asn 1195	Val	Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205	Asn	Leu	Arg	Arg	Thr 1210	Cys	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220	Glu	Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp

Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu 1295 1300 1305

Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1310 1315 1320

Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1325 1330 1335

Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350

Cys Leu Tyr Ser Gly 1355

<210> 46

<211> 1510

<212> PRT

<213> Homo sapiens

<400> 46

Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe 1 5 10 15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125 Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080

- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200
- Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 1215
- Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1230
- Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245
- Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe 1250 1260
- Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr 1265 1270 1275
- Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1280 1285 1290
- Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu 1295 1300 1305

Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1315

Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1325 1330 1335

Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350

Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1360 1355 1365

Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp 1370 1375

Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1385 1390 1395

Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val 1400

Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val 1415 1420

Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp 1430 1435

Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr 1445 1450 1455

Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe 1460 1465 1470

Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln 1480 1475 1485

Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu 1490 1495 1500

Gln Lys Lys Tyr Tyr Met Gln 1505 1510

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<213> Homo sapiens

<400> 47

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460 Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Glu Thr Glu
675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940 Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn 995 1000 1005

<210> 48

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<212> PRT

<213> Homo sapiens

<400> 48

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe

- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 . 410 . 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575
- Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590
- Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605
- Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095

- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 1150 1155
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200
- Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 1215
- Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1235
- Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245
- Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe 1250 1260
- Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr 1265 1270 1275
- Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp 1280 1285 1290
- Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu 1295 1300 1305
- Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro 1310 1315 1320

Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1325 1330 1335

Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350

Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 1365

Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Gly Asp 1370 1375 1380

Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1385 1390 1395

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Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu 1415 1420 1425

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<211> 8381

<212> DNA

<213> Homo sapiens

<400> 49

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Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asn Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540
- Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560
- Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050

Leu	Asn 1055	Asn	Lys	Lys	Asp	Ser 1060		Met	Ser	Asn	His 1065	Thr	Thr	Glu
Ile	Gly 1070	Lys	Asp	Leu	Asp	Tyr 1075		Lys	Asp	Val	Asn 1080	Gly	Thr	Thr
Ser	Gly 1085		Gly	Thr	Gly	Ser 1090	Ser	Val	Glu	Lys	Tyr 1095	Ile	Ile	Asp
Glu	Ser 1100	Asp	Tyr	Met	Ser	Phe 1105		Asn	Asn	Pro	Ser 1110	Leu	Thr	Val
Thr	Val 1115	Pro	Ile	Ala	Val	Gly 1120	Glu	Ser	Asp	Phe	Glu 1125	Asn	Leu	Asn
Thr	Glu 1130	Asp	Phe	Ser	Ser	Glu 1135		Asp	Leu	Glu	Glu 1140	Ser	Lys	Glu
Lys	Leu 1145	Asn	Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	Cys	Cys	Gln	Ile	Asn 1195	Val	Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
_	Trp 1205		Leu			Thr 1210		Phe	-		Val 1215		His	Asn
Trp	Phe 1220	Glu	Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	туr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	туг	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270		Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr

Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355		Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375	Cys	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	_	Ile	Glu	Asp	Val 1390	Asn	Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405	Ala	Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
	Thr 1430		_	_	_		_			_	Ala 1440		Val	Asp
Ser	Arg 1445	Asn	Val	Glu	Leu	Gln 1450	Pro	Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe	Gly	Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu

Gln	Lys 1505	Lys	Tyr	Tyr	Asn	Ala 1510		Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
Pro	Gln 1520	Lys	Pro	Ile	Pro	Arg 1525	Pro	Gly	Asn	Lys	Phe 1530	Gln	Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540		Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550		Cys	Leu	Asn	Met 1555		Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570		Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	_	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600	Thr	Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615	Ile	Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Leu	Ile 1625	Glu	Lys	Tyr	Phe	Val 1630	Ser	Pro	Thr	Leu	Phe 1635	Arg	Val	Ile
Arg	Leu 1640	Ala	Arg	Ile		Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
-	Gly 1655		_								Met 1665		Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly

	Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
	Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
·	Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
	Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
	Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
	Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810	Val	Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
	Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
	Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
	Leu	Ile 1850	Ala	Met	Asp	Leu	Pro 1855	Met	Val	Ser	Gly	Asp 1860	Arg	Ile	His
	Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
	Ser	Gly 1880			_		Leu 1885	_					Glu	Arg	Phe
	Met ,	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr
	Thr	Leu 1910	Lys	Arg	Lys	Gln	Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln
	Arg	Ala 1925	Tyr	Arg	Arg	His	Leu 1930	Leu	Lys	Arg	Thr	Val 1935	Lys	Gln	Ala
	Ser	Phe 1940	Thr	Tyr	Asn	Lys	Asn 1945	Lys	Ile	Lys	Gly	Gly 1950	Ala	Asn	Leu

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

<210> 55

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<212> PRT

<213> Homo sapiens

<400> 55

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val\$340\$ \$345\$ 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910
- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095

Glu	Ser 1100	Asp	Tyr	Met	Ser	Phe 1105		Asn	Asn	Pro	Ser 1110	Leu	Thr	Val
Thr	Val 1115	Pro	Ile	Ala	Val	Gly 1120	Glu	Ser	Asp	Phe	Glu 1125	Asn	Leu	Asn
Thr	Glu 1130	Asp	Phe	Ser	Ser	Glu 1135		Asp	Leu	Glu	Glu 1140	Ser	Lys	Glu
Lys	Leu 1145	Asn	Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160		Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	-	Cys	Gln	Ile	Asn 1195		Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205		Leu	Arg	Arg	Thr 1210	-	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220	Glu	Thr	Phe		Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250				_		_	_			Thr 1260		Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro

- Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Asn 1325 1330 1335
- Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val 1340 1345 1350
- Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu 1355 1360 1365
- Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp 1370 1375 1380
- Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys 1385 1390 1395
- Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val 1400 1405 1410
- Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val 1415 1420 1425
- Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp 1430 1435 1440
- Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Lys Ser Leu Tyr 1445 1450 1455
- Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe 1460 1465 1470
- Thr Leu Asn Leu Phe Ile Val Val Ile Ile Asp Asn Phe Asn Gln 1475 1480 1485
- Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu 1490 1495 1500
- Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys 1505 1510 1515
- Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met 1520 1530
- Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met 1535 1540 1545

Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555		Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570	Thr	Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	Gly	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile
Ser	Leu 1595	Arg	His	Tyr	Tyr	Phe 1600		Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615		Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Leu	Ile 1625	Glu	Lys	Tyr	Phe	Val 1630		Pro	Thr	Leu	Phe 1635	Arg	Val	Ile
Arg	Leu 1640		Arg	Ile	-	Arg 1645		Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655		Arg	Thr	Leu	Leu 1660		Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670	Phe	Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690		Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
	Gly 1700		-	-							Phe 1710	_	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	туr	Ile 1770	Ile	Ile	Ser

Phe	Leu 1775	Val	Val	Val	Asn	Met 1780		Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810		Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825		Lys	Leu	Ser	Gln 1830		Ala	Ala
Ala	Leu 1835		Pro	Pro	Leu	Asn 1840		Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
Leu	Ile 1850		Met	Asp	Leu	Pro 1855		Val	Ser	Gly	Asp 1860	Arg	Ile	His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe
Met	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr
Thr	Leu 1910	Lys	Arg	Lys		Glu 1915	Glu	Val	Ser	Ala	Val 1920	Ile	Ile	Gln
_	Ala 1925	-	_	_				_	_		Val 1935	_	Gln	Ala
Ser	Phe 1940	Thr	Tyr	Asn	Lys	Asn 1945	Lys	Ile	Lys	Gly	Gly 1950	Ala	Asn	Leu
Leu	Ile 1955	Lys	Glu	Asp	Met	Ile 1960	Ile	Asp	Arg	Ile	Asn 1965	Glu	Asn	Ser
Ile	Thr 1970	Glu	Lys	Thr	Asp	Leu 1975	Thr	Met	Ser	Thr	Ala 1980	Ala	Cys	Pro
Pro	Ser 1985	Tyr	Asp	Arg	Val	Thr 1990	Lys	Pro	Ile	Val	Glu 1995	Lys	His	Glu

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 , 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala 420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu 595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

- Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685
- Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700
- Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720
- Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735
- Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
 740 745 750
- Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765
- Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 775 780
- Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800
- Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815
- Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830
- Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845
- Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860
- Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880
- Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895
- Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

- Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925
- Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940
- Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960
- Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975
- Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990
- Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asn Glu 995 1000 1005
- Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020
- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 1060 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 1105 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140

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Lys	Leu 1145	Asn	Glu	Ser	Ser	Ser 1150	Ser	Ser	Glu	Gly	Ser 1155	Thr	Val	Asp
Ile	Gly 1160	Ala	Pro	Val	Glu	Glu 1165	Gln	Pro	Val	Val	Glu 1170	Pro	Glu	Glu
Thr	Leu 1175	Glu	Pro	Glu	Ala	Cys 1180	Phe	Thr	Glu	Gly	Cys 1185	Val	Gln	Arg
Phe	Lys 1190	_	Cys	Gln	Ile	Asn 1195	Val	Glu	Glu	Gly	Arg 1200	Gly	Lys	Gln
Trp	Trp 1205	Asn	Leu	Arg	Arg	Thr 1210	Cys	Phe	Arg	Ile	Val 1215	Glu	His	Asn
Trp	Phe 1220	Glu	Thr	Phe	Ile	Val 1225	Phe	Met	Ile	Leu	Leu 1230	Ser	Ser	Gly
Ala	Leu 1235	Ala	Phe	Glu	Asp	Ile 1240	Tyr	Ile	Asp	Gln	Arg 1245	Lys	Thr	Ile
Lys	Thr 1250	Met	Leu	Glu	Tyr	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	Tyr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325	Ala	Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355	Ile	Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu

Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375		Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390		Asn	His	Thr	Asp 1395	Cys	Leu	Lys
Leu	Ile 1400	Glu	Arg	Asn	Glu	Thr 1405		Arg	Trp	Lys	Asn 1410	Val	Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	_	Tyr	Leu	Ser	Leu 1425		Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435		Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445		Val	Glu	Leu	Gln 1450		Lys	Tyr	Glu	Lys 1455		Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe
Thr	Leu 1475	Asn	Leu	Phe	Ile	Gly 1480	Val	Ile	Ile	Asp	Asn 1485	Phe	Asn	Gln
Gln	Lys 1490	Lys	Lys	Phe	Gly	Gly 1495	Gln	Asp	Ile	Phe	Met 1500	Thr	Glu	Glu
Gln	Lys 1505	-	Tyr	Tyr	Asn	Ala 1510	Met	Lys	Lys	Leu	Gly 1515	Ser	Lys	Lys
											Phe 1530		Gly	Met
Val	Phe 1535	Asp	Phe	Val	Thr	Arg 1540	Gln	Val	Phe	Asp	Ile 1545	Ser	Ile	Met
Ile	Leu 1550	Ile	Cys	Leu	Asn	Met 1555	Val	Thr	Met	Met	Val 1560	Glu	Thr	Asp
Asp	Gln 1565	Ser	Glu	Tyr	Val	Thr 1570		Ile	Leu	Ser	Arg 1575	Ile	Asn	Leu
Val	Phe 1580	Ile	Val	Leu	Phe	Thr 1585	Gly	Glu	Cys	Val	Leu 1590	Lys	Leu	Ile

Ser	Leu 1595	_	His	Tyr	Tyr	Phe 1600	Thr	Ile	Gly	Trp	Asn 1605	Ile	Phe	Asp
Phe	Val 1610	Val	Val	Ile	Leu	Ser 1615	Ile	Val	Gly	Met	Phe 1620	Leu	Ala	Glu
Leu	Ile 1625	Glu	Lys	Tyr	Phe	Val 1630	Ser	Pro	Thr	Leu	Phe 1635	Gln	Val	Ile
Arg	Leu 1640		Arg	Ile	Gly	Arg 1645	Ile	Leu	Arg	Leu	Ile 1650	Lys	Gly	Ala
Lys	Gly 1655		Arg	Thr	Leu	Leu 1660	Phe	Ala	Leu	Met	Met 1665	Ser	Leu	Pro
Ala	Leu 1670		Asn	Ile	Gly	Leu 1675	Leu	Leu	Phe	Leu	Val 1680	Met	Phe	Ile
Tyr	Ala 1685	Ile	Phe	Gly	Met	Ser 1690	Asn	Phe	Ala	Tyr	Val 1695	Lys	Arg	Glu
Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705		Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735	Ser	Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
											Asp 1755		Gly	Asn
Pro	Ser 1760	Val	Gly	Ile	Phe	Phe 1765	Phe	Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	Tyr	Ile	Ala	Val	Ile 1785	Leu	Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795	Ser	Ala	Glu	Pro	Leu 1800	Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810	Val	Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp

Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala 1820 1825

Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln 1840 1835 1845

Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His 1850 1855 1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu 1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe 1880 1885

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr 1895 1900

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln 1910 1915

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala 1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu 1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser 1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro 1970 1975 1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu 1985 1990 1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys 2000 2005

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- Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45
- Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60
- Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80
- Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95
- Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr 100 105 110
- Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125
- Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140
- Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160
- Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175
- Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190
- Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205
- Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220
- Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
420 425 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
485 490 495

Arg Arg Asn Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 535 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Ser Ala 565 570 575

Leu Glu Gly Glu Gln Arg Met Trp Asp Leu Arg Thr Thr Ser Gln Met 580 585 590

Met Ser Thr Ala Pro Leu Arg Ile Thr Arg Ala Val Glu Ile Pro Cys 595 600 605

Leu Cys Pro Asp Asp Thr Glu Arg Asp Ala Thr Ala Thr 610 615 620

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<213> Homo sapiens

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu 20 25 30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile 50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu 65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Leu 85 90 95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser 115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe 130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr 145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg 165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp 180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp 195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu 210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu 225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe 245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn 260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu 275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu 290 295 300

- Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp 305 310 315 320
- Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys 325 330 335
- Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val 340 345 350
- Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe 355 360 365
- Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp 370 375 380
- Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met 385 390 395 400
- Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn 405 410 415
- Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
 420 425 430
- Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile 435 440 445
- Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala 450 455 460
- Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser 465 470 475 480
- Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
 485 490 495
- Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly 500 505 510
- Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser 515 520 525
- Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr 530 540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg 545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser 565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp 580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Asp Ser Leu
595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln 610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys 625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly 645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile 660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu 675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu 690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu 705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro 725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro 740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro 755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe 770 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu 785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly 835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu 850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile 865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val 885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe 900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln 915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val 930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met 945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met 965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu 980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu 995 1000 1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val 1010 1015 1020

- Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe 1025 1030 1035
- Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp 1040 1045 1050
- Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Thr Glu 1055 $$ 1060 $$ 1065
- Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr 1070 1075 1080
- Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp 1085 1090 1095
- Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val 1100 \cdot 1110
- Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn 1115 1120 1125
- Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu 1130 1135 1140
- Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp 1145 \$1150\$
- Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu 1160 1165 1170
- Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg 1175 1180 1185
- Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln 1190 1195 1200
- Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn 1205 1210 1215
- Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly 1220 1230
- Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile 1235 1240 1245

Lys	Thr 1250	Met	Leu	Glu	_	Ala 1255	Asp	Lys	Val	Phe	Thr 1260	Tyr	Ile	Phe
Ile	Leu 1265	Glu	Met	Leu	Leu	Lys 1270	Trp	Val	Ala	Tyr	Gly 1275	туr	Gln	Thr
Tyr	Phe 1280	Thr	Asn	Ala	Trp	Cys 1285	Trp	Leu	Asp	Phe	Leu 1290	Ile	Val	Asp
Val	Ser 1295	Leu	Val	Ser	Leu	Thr 1300	Ala	Asn	Ala	Leu	Gly 1305	Tyr	Ser	Glu
Leu	Gly 1310	Ala	Ile	Lys	Ser	Leu 1315	Arg	Thr	Leu	Arg	Ala 1320	Leu	Arg	Pro
Leu	Arg 1325		Leu	Ser	Arg	Phe 1330	Glu	Gly	Met	Arg	Val 1335	Val	Val	Asn
Ala	Leu 1340	Leu	Gly	Ala	Ile	Pro 1345	Ser	Ile	Met	Asn	Val 1350	Leu	Leu	Val
Cys	Leu 1355	Ile	Phe	Trp	Leu	Ile 1360	Phe	Ser	Ile	Met	Gly 1365	Val	Asn	Leu
Phe	Ala 1370	Gly	Lys	Phe	Tyr	His 1375	Cys	Ile	Asn	Thr	Thr 1380	Thr	Gly	Asp
Arg	Phe 1385	Asp	Ile	Glu	Asp	Val 1390	Asn	Asn	His	Thr	Asp 1395	Cys	Leu	Lys
			_					_	_	_	Asn 1410		Lys	Val
Asn	Phe 1415	Asp	Asn	Val	Gly	Phe 1420	Gly	Tyr	Leu	Ser	Leu 1425	Leu	Gln	Val
Ala	Thr 1430	Phe	Lys	Gly	Trp	Met 1435	Asp	Ile	Met	Tyr	Ala 1440	Ala	Val	Asp
Ser	Arg 1445	Asn	Val	Glu	Leu	Gln 1450	Pro	Lys	Tyr	Glu	Lys 1455	Ser	Leu	Tyr
Met	Tyr 1460	Leu	Tyr	Phe	Val	Ile 1465	Phe	Ile	Ile	Phe	Gly 1470	Ser	Phe	Phe

Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile 1625 1630 1635 Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala 1645 1650 Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro 1655 1660 Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu

Val	Gly 1700	Ile	Asp	Asp	Met	Phe 1705	Asn	Phe	Glu	Thr	Phe 1710	Gly	Asn	Ser
Met	Ile 1715	Cys	Leu	Phe	Gln	Ile 1720	Thr	Thr	Ser	Ala	Gly 1725	Trp	Asp	Gly
Leu	Leu 1730	Ala	Pro	Ile	Leu	Asn 1735		Lys	Pro	Pro	Asp 1740	Cys	Asp	Pro
Asn	Lys 1745	Val	Asn	Pro	Gly	Ser 1750	Ser	Val	Lys	Gly	Asp 1755	Cys	Gly	Asn
Pro	Ser 1760	Val	Gly		Phe	Phe 1765		Val	Ser	Tyr	Ile 1770	Ile	Ile	Ser
Phe	Leu 1775	Val	Val	Val	Asn	Met 1780	-	Ile	Ala	Val	Ile 1785		Glu	Asn
Phe	Ser 1790	Val	Ala	Thr	Glu	Glu 1795			Glu			Ser	Glu	Asp
Asp	Phe 1805	Glu	Met	Phe	Tyr	Glu 1810		Trp	Glu	Lys	Phe 1815	Asp	Pro	Asp
Ala	Thr 1820	Gln	Phe	Met	Glu	Phe 1825	Glu	Lys	Leu	Ser	Gln 1830	Phe	Ala	Ala
Ala	Leu 1835	Glu	Pro	Pro	Leu	Asn 1840	Leu	Pro	Gln	Pro	Asn 1845	Lys	Leu	Gln
						Pro 1855								His
Cys	Leu 1865	Asp	Ile	Leu	Phe	Ala 1870	Phe	Thr	Lys	Arg	Val 1875	Leu	Gly	Glu
Ser	Gly 1880	Glu	Met	Asp	Ala	Leu 1885	Arg	Ile	Gln	Met	Glu 1890	Glu	Arg	Phe
Met	Ala 1895	Ser	Asn	Pro	Ser	Lys 1900	Val	Ser	Tyr	Gln	Pro 1905	Ile	Thr	Thr
Thr	Leu 1910	Lys	Arg	Lys	Arg	Gly 1915	Ser	Ile	Cys	Cys	His 1920	Tyr	Ser	Ala

Cys Leu Gln Thr Pro Pro Phe Lys Ala Asn Cys Lys Thr Ser Phe 1925 1930 1935

Leu Tyr Val Gln 1940